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Neuberger

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(54) **FIBER OPTIC CONNECTOR FOR LASER SOURCES**

(71) Applicant: **Biolitec Pharma Marketing Ltd.**, F.T. Iabuan (MY)

(72) Inventor: **Wolfgang Neuberger**, Dubai (AE)

(73) Assignee: **Biolitec Pharma Marketing LTD**, Labuan (MY)

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(58) **Field of Classification Search**

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See application file for complete search history.

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Primary Examiner — Omar R Rojas

(74) *Attorney, Agent, or Firm* — BJ Associates; Bolesh J. Skutnik

(57) **ABSTRACT**

Connectors for optically coupling radiation accurately from radiation sources into waveguides in medical applications are provided. A preferred embodiment for coupling laser sources into optical fibers provides a connector comprising an outer body for handling connector; a two-part ferrule; an inner body which protects ferrule and holds its two parts together; a collet chuck through which an optical fiber is introduced; a spring; a ferrule interlock; and bending protection with a long fiber protection end. Main features are that the inner body moves within the outer body longitudinally, the spring-loaded ferrules move against a fixed position element in the laser housing via the spring load, and their relative shapes are designed to be assembled in only one possible angle position, thus maintaining alignment of elements to reduce/avoid lost power absorbed by the connector's proximal end due to coupling. The ferrule is mounted inside the connector and does not emerge from it for protecting the ferrule. In another embodiment the connector provides an electronic signature such as an RFID tag for waveguide recognition in a position close enough to the laser source to ensure identification. Additionally, the connector has an optional electric power and signal port.

13 Claims, 3 Drawing Sheets